The Influence of Financial Ratios toward Fincancial Distress Prediction with Base Lending Rate as Moderating Variable: Case in Mining Industries in Indonesia

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Absract: The purpose of this study is to analyze the financial distress prediction in the mining industries in Indonesia by using financial ratio analysis. In this study, researchers used base lending rate as a variable moderation because the mining industries generally use debt in running its business. There were in companies that meet the requirements in this study within the accounting periods from 2012 to 2014. Data were analyzed using SPSS Ver. 22. The results show that the total assets turnover ratio and working capital to total assets ratio significantly influence financial distress prediction, meanwhile the Current Ratio, Quick Ratio, Debt to Equity Ratio, Total Debt to Total Assets Ratio, and Return On Assets did not have any impact on financial distress prediction eventhough the data had been processsed directly and through moderating variable. Therefore, the base lending rate as moderating variable did not strengthen or weaken the financial ratios to influence financial distress prediction.

Keywords: Financial Distress, Financial Ratios, Base Lending Rate.

1. INTRODUCTION

The economic crisis began in 1997 in ASEAN, which was then followed by the global financial crisis in 2008. The crisis of 2008 arose from America, followed by the financial crisis in Europe that started in Greece in 2011. It has had an impact on other countries in the world in that it has reduced economic growth and led to low levels of consumption, then has had an impact on the low level of production. The decline in production levels decreased the use of energy which was used in the production process. Thus the economic and financial crisis that have occurred continuously in the last two decades, indirectly impacted the mining industries.

The declining in demand for mining products, is one of the causes of the vulnerability of the mining industries into bankruptcy. The decline in demand also led to a decline of the energy price. The Academic Rigour, Journalistic Flair, Patrick McGinly wrote on May 13, 2016, that "Fifty U.S. coal companies have

filed for bankruptcy since 2012" (http:// theconversation.com/will-taxpayers-foot-the-cleanup-bill-for-bankrupt-coal-companies-56415). This is due to the decline in the consumption of coal as raw material for energy generation. This is consistent with the report made by Elizabeth Shogren (HCN's Washington, DC, correspondent), dated Nov. 7, 2015 that "The Energy Information Agency expects an 8 percent decrease in total coal consumption in 2015 compared to 2014 ". Financial distress in the industries has already happened in the US according to Maria Gallucci in her report on the Business International Time which was posted on Jan, 11, 2016 that" Arch Coal Inc., one of the top American coal producers , filed for protection under Chapter 11 of the US Bankruptcy Code Monday in a bid to cut the company's long-term debt by more than $ 4.5 billion. Arch in November reported a net loss of $ 2 billion, or $ 93.91 per diluted share, for the third quarter of 2015. The company pointed to low natural-gas prices, weak electric-power demand and multiple coal-plant closures as reasons for the drop in revenue.(http://www.ibtimes.com/ arch-coal-nyseaci-files-bankruptcy-plunging-prices-weak-demand-batter-us-coal-sector-2259233). Although none of Indonesian mining industries listed on the stock market filed for bankruptcy, but their growth trends to slow down.

To evaluate the performance of companies based on financial statements which aims to predict the financial difficulties, one of the methods of financial statement analysis is the ratio analysis. In this case, the ratio used is associated with the leverage. Leverage ratio is explaining how much the company relies its operations on debt, the higher the ratio shows the higher the company's exposure to risk [16]. Nance et al (1993) in [10] declared financial difficulties are directly related to financial leverage.

Another factor that influences financial distress is macroeconomic factors, such as the Gross Domestic Product (GDP), inflation rate, interest rate which can influence the debt financing decision (Mokhova, and Zinecker, 2014, Baltaci and Ayaydin, 2014 [14], especially the interest rates on loans as the base lending rate that affects financial distress [1].

2. LITERATURE REVIEW

2.1. Financial Distress

Altman (1968) in [6] states that financial distress is a condition when a company may face, at any particular time, the occurrence of the insolvency or bankruptcy. Another opinion regarding financial distress is a condition of the company that has a negative wealth, raising the debt ratio, and inability to pay liabilities or debts. In terms of insolvency, financial distress is a condition in which company's assets are not enough to cover the debts, followed by a decline in cash flow from operations that cannot be used to pay debts (Turetsky 2001) [6]. According to Fabozzi and Drake [8], not all companies which are experiencing difficulties in paying to the lender and in financial distress situation will ultimately enter into the legal status of bankruptcy. Therefore, they classify financial distress into four categories, as follows:

1. Economic Failure
    Economic failure occurs when the company's revenues could not cover the total costs including cost of capital. Businesses that suffer this condition can still continue their operation as long as lenders are

filed for bankruptcy since 2012" (http:// theconversation.com/will-taxpayers-foot-the-cleanup-bill-for-bankrupt-coal-companies-56415). This is due to the decline in the consumption of coal as raw material for energy generation. This is consistent with the report made by Elizabeth Shogren (HCN's Washington, DC, correspondent), dated Nov. 7, 2015 that "The Energy Information Agency expects an 8 percent decrease in total coal consumption in 2015 compared to 2014 ". Financial distress in the industries has already happened in the US according to Maria Gallucci in her report on the Business International Time which was posted on Jan, 11, 2016 that" Arch Coal Inc., one of the top American coal producers , filed for protection under Chapter 11 of the US Bankruptcy Code Monday in a bid to cut the company's long-term debt by more than $ 4.5 billion. Arch in November reported a net loss of $ 2 billion, or $ 93.91 per diluted share, for the third quarter of 2015. The company pointed to low natural-gas prices, weak electric-power demand and multiple coal-plant closures as reasons for the drop in revenue.(http://www.ibtimes.com/arch-coal-nyseaci-files-bankruptcy-plunging-prices-weak-demand-batter-us-coal-sector-2259233). Although none of Indonesian mining industries listed on the stock market filed for bankruptcy, but their growth trends to slow down.

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1. Economic Failure
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(a) Current Ratio (CR): Current ratio is a liquidity ratio used to measure the availability of the corporate assets used for operational activities [14]. This ratio is also used to measure the ability of a company to pay off short-term liabilities using its current assets or show to which extent current assets cover current liabilities. The formula is:

$$CR = \frac{Current\ Assets}{Current\ Liabilities}$$

H_1: Current ratio influences the financial distress prediction

(b) Quick Ratio (QR): Quick ratio is a liquidity ratio that is used to measure the proportion of cash to total assets [14]. Quick ratio shows the company's ability to meet, pay liabilities of short-term debt with current assets without taking into account the value of inventory. This ratio is also called the Acid-test Ratio. The formula is:

$$CR = \frac{Current\ Assets - Inventory}{Current\ Liabilities}$$

H_2: Quick ratio influences the financial distress prediction

(c) Total Debt to Equity Ratio (DER): It is a ratio which indicates the proportion of debt in the company's equity. It shows how the company's activities are financed with debt [14]. In addition, this ratio can also describe to which extent the owners of capital can cover debts to outside parties. This ratio is also called the leverage ratio. The leverage ratio is a ratio to measure how well the company's capital structure's. The capital structure consists of long-term debt, preferred stock, and original stock. The formula is:

$$DER = \frac{Total\ Liabilities}{Total\ Equity}$$

H_3: Total debt to equity ratio influences the financial distress prediction

(d) Total Debts to Total Assets Ratio (DAR): This ratio is a comparison of total debts to total assets so that this ratio indicates to which extent the debt can be covered by assets. It also shows the proportion of liabilities held and all property owned. The formula is:

$$DAR = \frac{Total\ Liabilities}{Total\ Assets}$$

H_4: Total debts to total assets ratio influences the financial distress prediction.

(e) Total Assets Turnover (TATO): This ratio is used to measure the rate of return on assets of the company or the company's ability to earn income [14]. Also, this ratio shows the level of efficiency of the entire assets of the company in generating certain sales volume. The formula is:

$$TATO = \frac{Net\ Sales}{Total\ Assets}$$

H_5: Total assets turnover influences the financial distress prediction.

(f) Working Capital to Total Assets Ratio (WCR): Working capital to total assets ratio is a measure of net liquid assets of a company compared to total equity. The working capital is defined as the difference between current assets and current liabilities, characteristics of liquidity and size that are explicitly considered [5]. The formula is:

$$WCR = \frac{Working\ Capital}{Total\ Assets}$$

H_6: Working capital to total assets ratio influences the financial distress prediction.

(g) Return on Assets (ROA): Return on assets is the ratio that indicates the return on total assets used in the company. In addition, ROA shows a better measure for the profitability of a company because it shows the effectiveness of management in using assets to generate revenue. The formula is:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

H_7: Return on assets influences the financial distress prediction

2.3. Base Lending Rate

Base lending rate is the basic interest rate set when companies or individuals borrow money from a bank or financial institution . In Indonesia, the reference base lending rate is published by Bank Indonesia (BI). The policy of interest rates reflecting the stance of monetary policy, is one of the macroeconomic factors that may cause financial distress [15]. Interest rate may affect the level of funding in the company as long as they use a loan with low interest, eventhough in the hypothesis the interest rate negatively affects the level of financial debt (Deesomak *et al*, 2004 [15]. However, the base lending rate is an indication of the level of short term interest rates, and therefore the amount of base lending rate is reviewed quarterly.

3. RESEARCH METHODOLOGY

3.1. Hypothesis
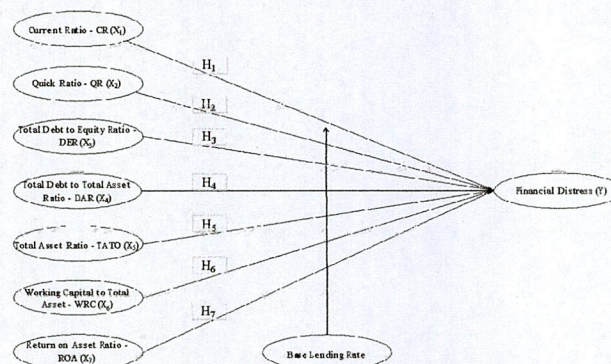
The hypothesis model of this research as follows :

Figure 1 : Hypothesis Model

3.2. Research Methodology

The samples of this study are the mining companies listed on the Indonesia Stock Exchange (*www.idx.co.id*), while the BI Rate was issued by Bank Indonesia (*www.bi.go.id*) during 2012-2014. The samples in this study amounted to 15 companies for 3 years

3.2. Evaluate Fit Model

(a) **Likelihood Test:** This test is to measure model fit between the models used in the study. The result is as follows

Table 1
Literation History

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	1	62.183	.133
	2	62.183	.134

Table 2
Literation History

Iteration		-2 Log likelihood	Coefficients							
			Constant	CR. Rate	QR. Rate	DER. Rate	DAR. Rate	TATO. Rate	WCR. Rate	ROA. Rate
Step 1	1	47.959	-.520	-2.857	-.563	8.514	3.606	-25.698	144.760	-105.873
	2	46.876	-.776	-6.279	1.378	12.017	3.214	-33.944	206.088	-153.455
	3	46.836	-.826	-7.444	2.199	12.831	2.895	-35.770	220.941	-164.992
	4	46.836	-.829	-7.504	2.247	12.865	2.896	-35.848	221.612	-165.514
	5	46.836	-.829	-7.504	2.247	12.865	2.896	-35.848	221.613	-165.515
	6	46.836	-.829	-7.504	2.247	12.865	2.896	-35.848	221.613	-165.515

Tables 1 and 2 show the value of -2LogL models that incorporate constants and variables (-2LogL end) amounted to 46.836 at the end of the step. From these results it can be concluded early -2LogL value> value -2LogL final (62.183> 46.836) so that it can be concluded the model fit to the data.

(b) **Hosmer and Lemeshow's Goodness of Fit Test:** The purpose of this testing is to test whether the empirical data fit the models. The result is

Table 3
Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	7.110	7	.418

Table 3 shows the value of Hosmer and Lemeshow's Goodness of Fit has a probability of 0.418 significance where the value is greater than 0.05 (0.418> 0.05) so that it can be concluded the model fit to the data.

(c)   Omnibus Test

Omnibus test is used to measure whether a model study is a significant research model. The research model is said to be significant if the value is below 0.05. The result is :

Table 4
Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	15.347	7	.032
	Block	15.347	7	.032
	Model	15.347	7	.032

Table 4 shows the results of chi-square goodness of fit of 0,032 where the value is less than 0.05, so it can be concluded that the model is significant.

3.3. Significance Test

Parameter estimation and interpretation of SPSS output can be seen in the section of Variable in Equation as follows:

Table 5
Influence of independennt Variables on Dependent Variable Directly

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	CR	-.769	1.222	.396	1	.529	.464
	QR	.310	1.083	.082	1	.774	1.364
	DER	1.443	1.105	1.705	1	.192	4.232
	DAR	-4.067	6.287	.418	1	.518	.017
	TATO	-2.729	1.344	4.125	1	.042	.065
	WCR	13.998	6.312	4.918	1	.027	1.200
	ROA	-9.653	6.992	1.906	1	.167	.000
	Constant	1.037	2.389	.189	1	.664	2.821

Table 6
Influence of independent Variables on Dependent Variable with Moderating Variable

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	CR	-7.504	19.407	.149	1	.699	.001
	QR	2.247	17.062	.017	1	.895	9.461
	DER	12.865	14.089	.834	1	.361	3.867
	DAR.	2.896	77.098	.001	1	.970	1.811
	TATO	-35.848	19.749	3.295	1	.049	.000
	WCR	221.613	102.137	4.708	1	.030	1.759
	ROA	-165.515	113.058	2.143	1	.143	.000
	Constant	-.829	2.013	.170	1	.680	.436

From table 5 and 6, DER and ROA do not affect the prediction of financial distress as opposed to research [3] also the study of [14] and [1]. CR and QR also do not affect the prediction of financial distress, in line with research [3] but contrary to [14]. In this research, DER has no influence on the financial distress prediction. This results are contrary with Nindita et. al. [14]. WCR has an influenc on the financial distress prediction in line with research [12]. As for the TATO affecting financial distress, it is consistent with research [1] but contrary to [12].

4. RESULTS AND DISCUSSIONS

TATO ratio and WCR have effects on and other ratios have effects on financial distress prediction in the mining industries in Indonesia either by moderation or not. The base lending rate weakened the relationship of all independent variables on financial distress prediction of the mining industries in Indonesia during 2012-2014.

TATO ratio affects the prediction of financial difficulties due to lower sales levels compared to the amount of assets used to generate income. A mining company's assets are largely a fixed asset for the manufacture of mining products. If sales are down, then it becomes inefficient use of assets. Depreciation costs and operation of the fixed assets are not comparable with the income earned. Thus, there is an idle capacity.

The reason of WCR's effect on financial distress prediction is in line with TATO. The fall in production and sales led to high inventories, and low account balance of other current assets such as accounts receivable and cash.

It can be concluded that TATO and WCR have an influence on prediction financial distress but is not affected by the base lending rate. This is due to the influence of these two ratios to the financial distress related to the decreased revenues. It is proven that other financial ratios do not affect the prediction of financial distress. To minimize the possibility of financial distress in the industries, it is suggested that the company makes some hedging positions in foreign exchange transactions, thus reducing the risk when commodity prices fall along with the delivery time of the commodity. However, However, some instruments hedging can cause a negative impact [10].

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